AMENDMENTS TO THE CLAIMS

1. (Original) A method for inducing blood vessel formation or engineering blood vessels in a tissue or organ of a mammal, said method comprising administering one or more cells selected from the group consisting of preadipocytes, adipocytes not having a genetic modification, perivascular cells, vascular smooth muscle cells, mesenchymal precursor cells, mesenchymal cells, and fibroblasts to a tissue or organ of a mammal in need of increased blood vessel formation or engineered blood vessels.

2. (Original) The method of claim 1, wherein said mammal has a deficiency of at least 5% of a particular cell type.

3. (Original) The method of claim 1, wherein said mammal has damage to said tissue or organ, and wherein said administering provides a dose of cells sufficient to increase a biological function of said tissue or organ.

4. (Original) The method of claim 1, wherein said mammal has a disease, disorder, or condition, and wherein said administering provides a dose of cells sufficient to ameliorate or stabilize said disease, disorder, or condition.

5. (Original) The method of claim 1, wherein said preadipocyte is a 3T3-F442A cell.

6. (Original) The method of claim 1, wherein said mesenchymal precursor cell is a 10T1/2 cell.

7. (Currently Amended) The method of claim 1, further comprising administering to said mammal one or more endothelial cells or endothelial precursor cells ~~cells selected from the group consisting of blood vascular endothelial cells, lymph vascular endothelial cells, endothelial cell lines, primary culture endothelial cells, endothelial cells derived from stem cells, bone marrow derived stem cells, cord blood derived cells, HUVEC, lymphatic endothelial cells, and endothelial pregenitor cells~~.

8. (Currently Amended) The method of claim 7, wherein said one or more endothelial cells or endothelial precursor cells ~~cells~~ is a HUVEC ~~cell~~.

9. (Original) The method of claim 1, further comprising administering a matrix to said mammal.

10. (Original) The method of claim 9, wherein said matrix comprises fibronectin.

11. (Original) The method of claim 9, wherein said matrix comprises collagen.

12. (Previously Presented) The method of claim 1, wherein said method increases the number of cells of said tissue or organ by at least 5% compared to a corresponding untreated control tissue or organ.

13. (Previously Presented) The method of claim 1, wherein said method increases the biological activity of a tissue or organ by at least 5% compared to a corresponding untreated control tissue or organ.

14. (Previously Presented) The method of claim 1, wherein said method increases blood vessel formation in said tissue or organ by at least 5% compared to a corresponding untreated control tissue or organ.

15. (Original) The method of claim 1, wherein said tissue or organ is selected from the group consisting of bladder, bone, brain, breast, cartilage, nervous tissue, esophagus, fallopian tube, heart, pancreas, intestines, gallbladder, kidney, liver, lung, ovaries, prostate, skeletal muscle, skin, spinal cord, spleen, stomach, testes, thymus, thyroid, trachea, urogenital tract, ureter, urethra, and uterus.

16. (Original) The method of claim 1, wherein said mammal is a human.

17. (Original) The method of claim 1, wherein said cells are part of a microvascular scaffold.

18. (Previously Presented) A method for increasing blood vessel formation or engineering blood vessels in a tissue or organ, said method comprising administering one or more cells selected from the group consisting of perivascular cells, vascular smooth muscle cells, mesenchymal precursor cells, mesenchymal cells, and fibroblasts to a tissue or organ in need of increased blood vessel formation or engineered blood vessels.

19. (Original) The method of claim 18, wherein said mesenchymal precursor cell is a 10T1/2 cell.

20. (Previously Presented) The method of claim 1, wherein said administering to said tissue or organ is carried out *in vivo*.

21. (Previously Presented) The method of claim 1, wherein said administering to said tissue or organ is carried out *ex vivo*.

22. (Currently Amended) The method of claim 18, further comprising administering to said tissue or organ one or more endothelial cells or endothelial precursor cells ~~cells selected from the group consisting of blood vascular endothelial cells, lymph vascular endothelial cells, endothelial cell lines, primary culture endothelial cells, endothelial cells derived from stem cells, bone marrow derived stem cells, cord blood derived cells, HUVEC, lymphatic endothelial cells, and endothelial pregenitor cells~~.

23. (Currently Amended) The method of claim 22, wherein said one or more endothelial cells or endothelial precursor cells ~~cell~~ is a HUVEC ~~cell~~.

24. (Original) The method of claim 18, wherein said method further comprising administering a matrix to said tissue or organ.

25. (Original) The method of claim 18, wherein said tissue or organ is selected from the group consisting of bladder, bone, brain, breast, cartilage, nervous tissue, esophagus, fallopian tube, heart, pancreas, intestines, gallbladder, kidney, liver, lung, ovaries, prostate, skeletal muscle, skin, spinal cord, spleen, stomach, testes, thymus, thyroid, trachea, urogenital tract, ureter, urethra, and uterus.

26. (Original) The method of claim 18, wherein said method increases the number of cells of said tissue or organ by at least 5% compared to a naturally-occurring corresponding control tissue or organ.

27. (Original) The method of claim 18, wherein said method increases the biological activity of a tissue or organ by at least 5% compared to a naturally-occurring corresponding control tissue or organ.

28. (Original) The method of claim 18, wherein said method increases blood vessel formation in said tissue or organ by at least 5% compared to a naturally-occurring corresponding control tissue or organ.

29. - 78. (Canceled)

79. (Previously Presented) The method of claim 18, wherein said administering to said tissue or organ is carried out *in vivo*.

80. (Previously Presented) The method of claim 18, wherein said administering to said tissue or organ is carried out *ex vivo*.

81. (New) The method of claim 1, wherein said one or more cells is a perivascular cell.

82. (New) The method of claim 18, wherein said one or more cells is a perivascular cell.

83. (New) The method of claim 7, wherein said endothelial cells or endothelial precursor cells are selected from the group consisting of blood vascular endothelial cells, lymph vascular endothelial cells, endothelial cell lines, primary culture endothelial cells, endothelial cells derived from stem cells, bone marrow derived stem cells, cord blood derived cells, lymphatic endothelial cells, and endothelial progenitor cells.

84. (New) The method of claim 83, wherein said endothelial cells or endothelial precursor cells are primary culture endothelial cells.

85. (New) The method of claim 22, wherein said endothelial cells or endothelial precursor cells are selected from the group consisting of blood vascular endothelial cells, lymph vascular endothelial cells, endothelial cell lines, primary culture endothelial cells, endothelial cells derived from stem cells, bone marrow derived stem cells, cord blood derived cells, lymphatic endothelial cells, and endothelial progenitor cells.

86. (New) The method of claim 85, wherein said endothelial cells or endothelial precursor cells are primary culture endothelial cells.